

Plastic Waste (In)Visibility in Plasticity

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This article examines the video game *Plasticity* as a compelling narrative medium that represents and critiques the ecological ramifications of plastic consumption in the Anthropocene era. The game's dystopian setting, where players navigate through environments devastated by plastic waste, serves as a metaphor for the real-world issues of waste management and environmental neglect. By integrating theories from material ecocriticism and close gaming methodologies, this paper analyses *Plasticity* both as a piece of eco-fiction and as an interactive experience that challenges players to reflect on their own consumption habits. The game's design and player agency are highlighted as tools that expose the often invisible consequences of waste disposal practices. I argue that *Plasticity* utilizes the concept of Chthulucene aesthetics, which I define as an approach that embraces ecological entanglement and multispecies perspectives, challenging traditional views of beauty by finding harmony in environmental disturbances and the interconnectedness of all life forms, to illuminate the strategic invisibility of plastic waste. The analysis reveals the game's potential to open a space for interpretation of what remains in the dark by practices dictated as normal in terms of plastic waste disposal practices in the Anthropocene.

Keywords: *Anthropocene, material ecocriticism, video games, plastic waste, Chthulucene aesthetics, strategic invisibility*





Image 1. Banner, *Plasticity*, Image: plasticitygame.wixsite.com, all rights reserved.

Introduction

At the fore of this analysis is *Plasticity*, a video game epitomizing the Anthropocene era. The game intricately weaves a narrative that centers on the dynamics of plastic consumption and waste management. Set in a dystopian reality swamped by plastic debris, the game unfolds through Noa, a young girl haunted by memories, including her mother's death, as she strives to mend the present and safeguard the future. Her journey, which spans from her mother's birthplace, Avalon Island, to regions beyond, reveals landscapes ravaged by plastic pollution. Throughout the game, Noa's actions, such as disposing of plastic in bins, symbolize an endeavor to cleanse the environment and revive natural elements like plant life. Crafted by 30 students from the University of Southern California, this puzzle-platformer indie game aims to spotlight the critical issue of plastic pollution by creating a space to engage with it. The entanglement with plastic waste through the game is done explicitly and implicitly paralleling the physical world where the visible contains odd arrangements

and the invisible is the place where failures occur through repetitious and exploitative rearrangements.

In terms of aesthetics, *Plasticity* employs a distinctive art style that juxtaposes the remnants of human civilization against the persistent encroachment of pollution, serving as a constant visual reminder of humanity's impact on the planet. Correspondingly, the game's sound design complements the visual storytelling, with the diegetic sounds of wildlife and nature often overshadowed by the unnerving quietude of the plastic-dominated landscapes. Through the gameplay, players traverse visual representations of environmental neglect through the eyes of a young protagonist navigating a once-thriving world now choked by plastic waste. As the game progresses, the players are prompted to interact with their surroundings, solve contextual puzzles, and make decisions that can either contribute to the restoration of the ecosystem or lead to its further degradation. These interactions are designed not merely to entertain but to also evoke



Image 2. Avalon Island, *Plasticity*, Image: plasticitygame.wixsite.com, all rights reserved.

an emotional response, encouraging the players to contemplate the weight of their in-game decisions as analogs of real-life circumstances.

Despite its hauntingly beautiful visuals and environmental themes, *Plasticity* enters the ongoing debate about video games as a form of art. Echoing Aaron Smuts' arguments, I propose that video games have traversed a similar trajectory toward artistic recognition as, for example, films and literature.¹ This is evidenced by the increasing number of museums and art programs that have incorporated video games into their exhibitions, permanent collections, and curricula, recognizing the medium's achievements in the art world.² Nevertheless, I perceive video games beyond their artistic value; they are human-created, multisensory experiences with

a distinct agency. This perspective aligns with Heather Davis's and Karen Barad's theories on material agency, suggesting that video games like *Plasticity* do not merely reflect the creators' intentions but also possess an inherent capacity to influence.³ When players interact with *Plasticity* they are not just consuming an artistic product; they are engaging in a dynamic process that fosters a unique interpretive experience.

Embarking on this scholarly exploration, the paper begins by closely examining how *Plasticity* engages with the ecological discourse surrounding plastic consumption and disposal. Through a material ecocritical lens, I explore the game's potential to reflect, critique, and possibly transform human-environment interactions during the Anthropocene. The central question I pose is: How does *Plasticity*, as an eco-fictional and interactive medium, navigate the contentious role of plastic in our waste management

1 Aaron Smuts, "Are Video Games Art," *Contemporary Aesthetics* vol. 3, no. 6 (2005), https://digitalcommons.risd.edu/liberalarts_contempaesthetics/vol3/iss1/6/.

2 Jeroen Bourgonjon, Vandermeersche Geert, and Rutten Kris, "Perspectives on Video Games as Art," *CLCWeb: Comparative Literature and Culture* 19, no. 4 (2017).

3 Heather Davis, *Plastic Matter*, eds. Stacy Alaimo and Nicole Starosielski, Elements (Croydon: Duke University Press, 2022).

practices? This investigation delves into the contrast between the tangible presence of plastic in gaming hardware and its virtual depiction in the game's environment. The discourse also aims to unravel the complex depiction of plastic – a material deeply integrated into our daily lives and the virtual spaces we occupy.

In this article, I employ close reading, a methodology with deep roots in the humanities, known for its versatility across both informal and systematic analyses.⁴ This approach is applied to *Plasticity* through the analytical lens of material ecocritical theory, alongside posthumanism perspectives inspired by Donna Haraway's concept of the *Chthulucene* and Karen Barad's theory of *intra-actions*.⁵ To deepen the analysis, I introduce the technique of "imagined naïve reader", which allows a critical yet fresh engagement with the game's content.

In the Anthropocene epoch, human activities have profoundly marked Earth's geology and ecosystems. Plastic, in particular, stands out as a symbol of modern progress with significant environmental repercussions. Its prevalence and persistence reflect the expansive influence of capitalist production and consumer culture, presenting a complex, global challenge.⁶ This paper situates plastic within the intricate framework of video games, an industry reliant on plastic for its hardware and accessories.

Aubrey Anable brings into attention the dual educational and emotional roles of computer games, highlighting their capacity to make the invisible mechanics of technology both visible and comprehensible via on-screen interactions.⁷ Building on Anable's observation, this paper examines the entanglements between the tangible mechanics of video games and the way in which they contribute to the changing aesthetics in the Anthropocene era. Anable's insights underpin this study, illuminating how games make the subtle effects of the Anthropocene tangible to players through interactive experiences.

Within this critical framework, in *Plasticity* the screen is not merely a boundary but a porous zone of contact – facilitating continuous interaction and mutual influence between the player and the game's environmental narrative. By emphasizing the materiality of the screen, along with its vivid imagery, the analysis advocates for a nuanced examination of the complex interactions the screen enables.⁸ Such an inquiry is instrumental in understanding how digital interfaces can extend beyond mere visual displays to become active agents in shaping the player's affective and cognitive engagement with the pressing issues of the Anthropocene.⁹

Through this lens, *Plasticity* serves as a focal point for critical analysis, revealing the complex role of plastic both as a physical part of gaming technology and as a thematic element within the game narrative. Further on, this study examines the game's portrayal of waste disposal routines and how they reflect society's intricate and often conflicting relationship with plastic. It delves

4 Jim Bizzocchi and Joshua Tanenbaum, "Well Read: Applying Close Reading Techniques to Gameplay Experiences," (Pittsburgh: ETC Press, 2011).

5 Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene*, eds. Michael M. J. Fischer and Joseph Dumit, Experimental Futures (Durham: Duke University Press, 2016); Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press, 2007).

6 Trisia Farrelly, Sy Taffel, & Ian Shaw, *Plastic Legacies: Pollution, Persistence, and Politics* (Edmonton: Au Press, 2021).

7 Aubrey Anable, *Playing with Feelings: Video Games and Affect* (Minneapolis: University of Minnesota Press, 2018), 27.

8 Espen Aarseth, "Playing Research: Methodological Approaches to Game Analysis," *Artnodes* No. 7 (2007).

9 Anable, *Playing with Feelings: Video Games and Affect*, 38.

into the nuances of the visibility and invisibility of plastic, questioning what it denotes.

The Visible Canvas

This chapter provides a multi-dimensional analysis of the video game industry, exploring the interplay between technological evolution, design aesthetics, and environmental issues. I delve into the visible canvas, examining the symbiotic relationship between the tangible world of gaming hardware and the immersive digital experiences of gameplay. *Plasticity* serves as a pivotal case study, illustrating the interconnection between material existence and environmentally themed narratives within video games. This examination not only outlines the physical facets of gaming but also addresses the plastic within the game as material that has its own role and interaction, revealing how it unfolds meaning through its presence. In the final section, I bring into the forefront the aesthetic dimensions of the game, adopting Donna Haraway's concept of the Chthulucene. Here, I reframe ecological aesthetics within this framework, positioning the virtual environments of *Plasticity* as a site of non-human agency.

The Entanglement of Plastic and Video Games

In the nascent stages of video gaming, cartridges were designed with a focus on immediate utility, reflecting a transient approach to material usage. This design philosophy points to an era where longevity and ecological considerations were secondary to the excitement over the new technological frontier. However, as the industry matured, the transition towards durable plastic cases for systems like the TurboGrafx-16 and PlayStation marked a significant shift. This evolution was driven by the need to protect the delicate optical discs, yet it also mirrored broader consumer trends and a growing awareness of product longevity. Nevertheless, the role of plastic in game packaging extended

beyond mere protection; it became a crucial element in marketing and retail presentation. Robust clamshells and captivating graphics were designed to captivate consumers and enhance the product's shelf appeal in retail spaces. This strategy, successful in driving sales, inadvertently contributed to a looming e-waste crisis. The high-tech refuse generated by discarded consoles and games became a testament to the industry's oversight of the end-of-life phase of its products.¹⁰

This paradoxical scenario reflects a broader cultural and economic trend where the allure of newness often overshadows considerations of sustainability. The video game industry, in its pursuit of capturing market shares and consumer attention, mirrored the larger societal inclination towards disposability and planned obsolescence. Notably, there were moments in the industry's history where design innovations pursued sustainability. The Bally Professional Arcade and Mattel's Intellivision, with their built-in storage and book-like packaging, represent a departure from the norm, indicating an awareness of the importance of product longevity.¹¹ However, these instances were exceptions in an industry largely governed by the economics of disposability.

The preservation challenges posed by the degradation of plastics in video game hardware are emblematic of the transient nature of these products. Beyond the yellowing of video game cases as a visible sign of chemical degradation, there lies a poignant connection to the obscured realities of their production, a narrative starkly portrayed in games like Molleindustria's *Phone*

10 James Newman, *Best Before: Videogames, Supersession and Obsolescence* (New York: Routledge, 2012). Raiford Guins, *Game After: A Cultural Study of Video Game Afterlife* (Cambridge: The MIT Press, 2014).

11 Raiford Guins, *Game After: A Cultural Study of Video Game Afterlife*, 85.

Story.¹² This game not only highlights the grim realities of electronics production, such as labor exploitation and environmental disregard, conditions painfully mirrored in the hazardous waste from aluminum dust in factories, but also prompts a reflection on the wider implications of these production practices.¹³ As Jussi Parikka's analysis suggests, the allure of the new, exemplified by the shiny finishes of our devices, masks a murky underbelly of gadget culture. The aging of gaming hardware plastics, hastened by their intrinsic composition and the external aggressions of heat and light, is indicative of a larger ecological predicament. These materials, once discarded, do not merely accumulate; they become entangled with the myriad materialities of their environment, weaved into the fabric of the Earth. While the lighter-colored plastics of older consoles exhibit their age more visibly, the darker plastics of later models are not immune to this differential aging either, which challenges their functionality and reflects the shifting material culture within the industry.¹⁴ The paradox of the industry's reliance on durable yet degradable plastics underscores a critical tension at the heart of modern consumer electronics: the ephemeral nature of the new in gaming, and by extension, in the realm of technological consumption. The gradual decay of these materials, commencing soon after their production, precipitates a loss of original form and function, exposing the fleeting existence of what is often perceived as an enduring technology.

In light of Parikka's discourse on alternative media materiality, the utilization of plastics in the video game industry can be seen as a microcosm of a larger ecological narrative. These

12 Newman, *Best Before: Videogames, Supersession and Obsolescence*, 12. Molleindustria, *Phone Story* (iOS (iPhone), Android, Adobe Flash2011).

13 Jussi Parikka, *A Geology of Media*, vol. 46, *Electronics Mediations* (Minneapolis: University of Minnesota Press, 2015), 89.

14 Newman, *Best Before: Videogames, Supersession and Obsolescence*, 13.

plastics, once harbingers of innovation and convenience, now serve as relics of the temporal myopia of consumer culture. As we stand at the crossroads of technological advancement and ecological preservation, it becomes imperative to re-evaluate the materials that underpin our digital ecosystems. The metamorphosis of gaming hardware, from vibrant to faded, encapsulates a journey of material deterioration that is inextricably linked to the Anthropocene. It is a stark reminder of the non-neutrality of media technologies, where the physical decay of gaming consoles is symptomatic of a broader environmental decay, spotlighting the urgent need to reconsider the principles that guide the production and disposal of technology. The intersection of gaming culture with the alternative materiality discourse invites a critical examination of the life cycle of our devices and a reimagining of a future where technology harmonizes with ecological imperatives. As I transition to the next section, centered on plastic matter in the *Plasticity* video game, I carry forward the understanding that material choices in gaming are not just aesthetic decisions but accentuate the governing assumptions of techno-capitalist discourses that promote the fallacy of endless natural resource exploitation without consequence, underestimating the agency and resilience of the natural world.

The Interplay of Plastic Matter in *Plasticity*

Heather Davis, in her book *Plastic Matter*, discusses the transformative and manipulative nature of plastic, which makes plastic an active agent that influences and reconfigures human material relationships.¹⁵ This argument aligns with Karen Barad's concept of *agential realism*, which posits that entities do not precede their interactions but are constituted through their mutual entanglements, in other words,

15 Davis, *Plastic Matter*, 21-38.



Image 3. Flooded Town, *Plasticity*, Image: plasticitygame.wixsite.com, all rights reserved.

intra-actions.¹⁶ Following the same line of thought with Davis and Barad, I argue that in *Plasticity*, plastic moves beyond mere aesthetic representation and it offers a profound commentary on environmental interrelations.

To begin with, it is essential to define what ‘intra-action’ means within Barad’s framework. Barad elucidates this by stating:

Matter is substance in its intra-active becoming – not a thing, but a doing, a congealing of agency. Matter is a stabilizing and destabilizing process of iterative intra-activity. Phenomena come to matter through this process of ongoing intra-activity. That is, matter refers to the materiality and materialization of phenomena, not to an assumed, inherent, fixed property of abstract, independently existing objects.¹⁷

16 Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, 132-87.

17 *Ibid.*, 183.

Essentially, it is not about entities acting upon each other but about entities coming into existence through their mutual relations. Keeping this in view, instead of the traditional concept of interaction, where entities are seen as separate before their meeting, intra-action posits that the boundaries or properties of entities are not pre-established but formed through these intricate intra-actions. As exemplified by *Plasticity*, plastic does not merely interact; its intra-acts with the environment within which it is situated.

Plasticity’s landscape, even though it is an imaginary place, depicts an urban topography that has undergone a metamorphosis, with buildings and streets no longer serving their original purpose. Instead, they form a part of a reconfigured landscape that speaks to a new post-catastrophe mode of existence. Water, a natural element, has encroached upon the urban environment, suggesting a reclaiming of space by nature after a period of human-induced ecological neglect. The surface of the water is a palimpsest of human debris; this mélange of refuse serves as a stark visual reminder of the Anthropocene. The



Image 4. Destruction, *Plasticity*, Image: plasticitygame.wixsite.com, all rights reserved.

buildings, partially submerged and in various states of erosion, create a vertical dimension that contrasts with the horizontal expanse of the water, leading to a stratified visual narrative. The texture of the landscape, though digitally rendered, invokes the tactile quality of dissolution: in the roughness of the dilapidated walls, the slickness of the algae-covered waters, and the chaotic assemblage of plastic litter in many forms.

This is indicative of having plastic as a key element in the game mechanics and plot, adding an active role to the plastic as an active participant influencing the game's world and the players' choices. Here plastic is evocative of the plastic waste nowadays present on Earth, however in appealing forms such as supermarket goods, toys, beauty products, clothes and so forth, which eventually become waste. According to the OECD Global Plastics Report, the Western world is one of the biggest plastic waste producers globally. Breaking it down, the United States contributes 21%, OECD Europe 19%, and other OECD countries add another 9%, to the total.¹⁸

¹⁸ OECD, *Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options* (Paris 2022).

However, the advanced waste management infrastructures and their strategies make waste disappear out of sight, creating an illusion of absence.

The preceding exploration within *Plasticity* serves as a vivid reminder of the deep entanglements between material engagements. The agency that plastic shows with its surroundings in the game finds its way into the physical. Poetically, it transforms the materiality of plastic from a passive to an active agent. Thus, here, the game *Plasticity* is not merely a metaphor but a dynamic participant in a story of ecological dissonance, a visceral representation of the Anthropocene inscribed in the game's very fabric. Through its Chthulucene aesthetics, *Plasticity* compels the player to confront the paradox of plastic: its utility and ubiquity against its enduring impact created by its agency and intra-actions.

Plasticity and the Chthulucene Aesthetics

The Anthropocene marks a new geological era driven primarily by human intervention, particularly the burning of fossil fuels. This era,

only 250 years old, represents a significant departure from the stable climatic conditions of the preceding Holocene, which facilitated human agriculture and civilization.¹⁹ This epoch is also marked by its aesthetics and its ode to what is beautiful or appealing to the eye. Nevertheless, Donna Haraway, in contradiction with the Anthropocene and its connotations, reframes the role of humans within the broader ecological system and emphasizes the importance of multispecies collaborations. The Chthulucene refuses the singular lens of human experience and opens up a world where non-human entities have stories, sufferings, and joys that are as significant as our own.²⁰

As players guide Noa through the remnants of a plastic-entangled world they are not just traversing a digital landscape; they are navigating the dense web of ecological interrelations that the Chthulucene embodies. It is an aesthetic that rejects the grandeur of unspoiled nature or the magnificence of human achievements. Instead, it finds a profound beauty in disturbance, in the acknowledgment that we, along with birds ensnared by plastic or cities submerged by rising seas, are part of a larger, intricate, and often troubled ecological fabric.

Haraway introduces the Chthulucene through the figure of Pimoa cthulhu, a spider species that embodies the idea of being in place and having a place yet being open to travels and transformations. This spider symbolizes the interconnectedness inherent in the Chthulucene, where nothing is connected to everything, but everything is connected to something.²¹ Since the 17th century, Western civilization has been characterized by a conquest of nature, as described by Francis Bacon. This conquest has led to the treatment

of the non-human and non-European world as spaces devoid of importance, essentially invisible to the imperial gaze.²² Such a perspective has profoundly influenced the way humans interact with and perceive their environment, shaping the collective understanding of the planet and its resources.

Echoing the complexity of Haraway's Chthulucene, Mirzoeff confronts us with the insurmountable scale of the Anthropocene by arguing that the Anthropocene, encompassing everything from the lithosphere to the upper atmosphere and all biota in between, cannot be comprehended in its entirety through direct observation. Instead, it demands visualization, a process complicated by the sheer scale and complexity of its impact.²³ This task is likened to the visualization of a battlefield by a general, but with a critical difference: the Anthropocene is a human-created phenomenon, now seemingly engaged in a purposeless drive towards its own destruction. This paradoxical situation requires a rethinking of visualization, moving beyond mere classification and separation to a more profound form of aestheticization.

In the Chthulucene, Mirzoeff's concept of counter-visibility becomes pivotal. It challenges the traditional sensory order and the pre-existing a priori forms that dictate what is perceptible. In this context, the video game *Plasticity* brings into focus the invisible, the marginal, the oppressed. As such, it could be interpreted as an antithetical aesthetic force. It disrupts the traditional sensory order, challenging the pre-existing a priori forms that have long dictated the perceptible. In this sense, the game acts as an experiential medium through which players confront the complexities of ecological entanglement, not through grand narratives but through intimate, affective experiences. In the Chthulucene, aesthetics is a call

19 Nicholas Mirzoeff, "Visualizing the Anthropocene," *Public Culture* 26, no. 2 (2014).

20 Haraway, *Staying with the Trouble: Making Kin in the Chthulucene*.

21 *Ibid.*, 31.

22 Mirzoeff, "Visualizing the Anthropocene."

23 *Ibid.*



Image 5. The Forest, *Plasticity*, Image: plasticitygame.wixsite.com, all rights reserved.

to attunement, a demand for an embodied and emotional engagement with the world. It asks that we not only understand but also feel the weight of our ecological entanglements. This fosters the claim that the landscapes of *Plasticity* are not serene vistas to be admired but scenes of a more profound disquietude that defies traditional aesthetic appreciation and categorization.

Following the same line, I suggest that in the game as such aesthetics is recalibrated to foster an intimate awareness of ecological interdependence. The gameplay, rather than providing an escape, becomes a mode of ecological thought, a means to sensitize players to the profound entanglements of their existence with the non-human world. Noa's constant engagement with the non-human world, for example whales on the beach or plants or trees in the forest, creates a recalibration that is not just a cognitive exercise but a deeply affective process, where the human and the non-human merge, forming an unusual aesthetics embodied in the player's experience. Here the pleasure is intertwined with discomfort, and beauty is found in the impartiality and openness towards all forms of existence. This aesthetic demands a different kind of attention, one that is attuned

to the subtle and interconnected nature of the ecological existence.

The Invisible Currents

Transitioning to the subtle, in this chapter I inquire into the enigma of our often inadvertent interaction with waste, as exemplified in *Plasticity*. I question our collective oversight of waste, which despite its ubiquity, like in the dystopian setting of *Avalon*, seems to blend into the background, creating an illusive invisibility. This perceptual contradiction between the omnipresence and imperceptibility of waste prompted me to explore the underlying societal dynamics that dictate this phenomenon. Drawing on Mary Douglas's seminal *Purity and Danger* and Max Liboiron's *Pollution is Colonialism*, I analyze how a society's approach to waste management reflects its intrinsic order, hierarchies, and values, with waste control symbolizing a quest for civilizational advancement and order.²⁴

24 Mary Douglas, *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (London: Routledge, 2002). Max Liboiron, *Pollution Is Colonialism* (Croydon: Duke University Press, 2021).

Incorporating Kevin Hetherington's article on consumption, disposal, and absent presence, I discuss how laws that regulate waste disposal, paralleling the game's narrative, render waste invisible, facilitating a disconnect from the reality of our consumption patterns.²⁵ Inspired by these works, I contend that *Plasticity*, and sophisticated waste management infrastructures alike, mask the true scale of our plastic consumption, challenging us to reconsider contemporary sustainable practices.

The Invisibility of the Visible

In view of the intricate dance of concealment and display, this section examines the nuanced dilemma where the most palpable realities of waste and pollution are strategically relegated to the peripheries of our awareness. Within the simulated environs of *Plasticity*, players encounter a virtual microcosm that mirrors the global predicament, where the act of discarding is sanitized and the remnants of consumption are shrouded in a veil of obscurity. This dynamic, echoing critical discourses in environmental humanities, invites reflection on the stark contrast between the visible efforts to manage waste and the less perceptible but profound implications of this management to ecological systems.

In this context, the game thus serves as a metaphor for the societal approach to pollution and waste management. It emphasizes that efforts to maintain clean and orderly environments often lead to the displacement of waste to less visible or less regulated areas. This mechanic in *Plasticity* parallels Serres' notion of an illusory sense of order that masks the underlying environmental degradation.²⁶ Following the same line, Rob Nixon critiques the invisible,

inconsequential attitude that is often adopted towards pollution.²⁷ The focus on cleanliness, especially in industrial and economic contexts, often leads to increased pollution. The pursuit of sanitized, controlled environments in urban and industrial areas frequently results in the relocation of waste and pollutants to less monitored environments, causing significant accumulation of waste, as is depicted in *Plasticity*.

Adding another dimension into the discussion, in order to highlight not just the product that goes into the bin but all the waste created through the production of a product, Avfall Sverige started a campaign in 2015 titled the #invisiblewaste #osynligtavfall. The purpose was to bring out the overlooked aspect of waste in our daily lives, emphasizing that what is unseen can often have the most profound impact. There is a hidden facet of consumption that remains largely unnoticed: the invisible waste generated during product manufacturing. A prime illustration is the smartphone. While its tangible form weighs less than 200 grams, a staggering 86 kilograms of waste are birthed from its creation.²⁸ Similarly, *Plasticity* as a game exemplifies this disconnect, offering players a window into the tangible consequences of plastic use while hinting at the larger, unseen waste that permeates our environment.

Focusing more closely on performance within the game, the players observe Noa's diligent act of gathering plastic waste and disposing of it in designated trash and recycling bins. This aspect of the gameplay calls to mind Kevin Hetherington's observations, which suggest that highly efficient waste management systems could unintentionally foster a consumer culture that overlooks the

25 Kevin Hetherington, "Secondhandedness: Consumption, Disposal, and Absent Presence," *Environment and Planning D: Society and Space* 22, no. 1 (2004).

26 Michel Serres, *The Natural Contract* (Michigan: University of Michigan Press, 1995).

27 Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge: Harvard University Press, 2011).

28 "Invisible Waste," accessed October 31, 2023, <https://www.avfallsverige.se/in-english/invisible-waste/>.



Image 5. The Beach, *Plasticity*, Image: plasticitygame.wixsite.com, all rights reserved.

enduring impact of waste.²⁹ Thus, the invisibility of waste serves as a double-edged sword: it conceals the immediate evidence of refuse, yet it also weakens consumers' awareness of their environmental impact. Building on this concept, Hetherington suggests that waste disposal is not simply a final step but, rather, a complex social act that involves placing absences – a practice that profoundly affects our perceptions of social dynamics and environmental conduct.³⁰ Such practices cultivate the facade of a waste-free society, whereas, in actuality, waste is frequently displaced – gathering into oceanic gyres like the Great Pacific Garbage Patch, buried to blend with the earth, or incinerated and released into the atmosphere. This leads to its accumulation in excess in tangible or intangible forms, which the Earth has difficulty processing.³¹ Consequently,

the way we, as humans, manage and perceive waste invisibility brings to the fore significant ethical considerations regarding our engagement with our surroundings and broader societal values.

It is essential to acknowledge that, historically, the assessment of a society's waste management practices has often served as a barometer for its level of civilization – a tale deeply rooted in Western ideology. This paradigm suggests that societies deemed less civilized maintain a different relationship with waste, where the presence and proximity of refuse, including its sight and odor, do not elicit disgust. Conversely, as societies progress through stages of civilization, a detachment from waste develops, a concept akin to coprophilia – although this primarily pertains to excrement, it can be metaphorically extended to include all forms of waste.³² Here, the visibility of waste paradoxically leads to an invisibility due to its omnipresence. In this vein of thought, the game *Plasticity* can be viewed as an allegory for

29 Hetherington, "Secondhandedness: Consumption, Disposal, and Absent Presence."

30 Ibid.

31 Christina Gerhardt, "Plastiglomerate: Plastics, Geology, and the New Materialism of the Anthropocene," in *Plastic Legacies: Pollution, Persistence, and Politics*, eds. Trisia Farelly, Sy Taffel & Ian Shaw (Edmonton: AU Press, 2021).

32 Liboiron, *Pollution Is Colonialism*, 75.

the real-world mechanisms of waste invisibility. As players guide Noa in her quest to navigate through a world marred by the remnants of consumption, the game becomes a powerful narrative tool that exposes the often unseen consequences of the throwaway culture. The game's environmental storytelling demonstrates how incremental changes in the landscape – a bottle here, a plastic bag there – can lead to profound transformations, not only in the physical world but in the cultural consciousness as well. The game's aesthetics, therefore, not only underlines the tangible accumulation of waste but also the gradual shift in perception that comes with the normalization of such pollution. With time, engaging with waste has become normal since the accumulation had the opportunity to take place. This dynamic explains why strategic visibility can foster blindness towards objects like plastic waste. In other words, persistent visibility can render objects invisible by a process of familiarity and normalization. This framework exemplifies Susan Sontag's concept of the invisibility of the visible. Sontag contends that continuous exposure to disturbing realities lessens their impact. This process allows visible horrors to fade into the background, becoming normalized and triggering desensitization.³³

Strategic Invisibility

Plasticity's game design serves to maintain player engagement through a cyclical process of repetition, mastery, and failure. Players are tasked with the collection and recycling of plastic bottles – a Sisyphean endeavor that metaphorically plays up to the relentless nature of plastic pollution. The bottles keep reappearing, or wherever Noa goes she encounters plastic waste. The performative act of cleaning needs to endure. As elucidated by Laura op de Beke: “With each repetition, assumptions about what changes and what stays the same become more fixed, making the future

seem more predictable and stable. However, to achieve mastery, players must suffer failure.”³⁴

Reflective of this dichotomy, the game presents two divergent conclusions: one depicts Avalon's salvation from ecological ruin, while the other shows environmental degradation continuing unabated, despite Noa's best efforts. The bifurcation of outcomes emphasizes a poignant ecological message: the human waste management system and intervention can, at best, merely relocate waste through transformative intra-actions, as matter does not vanish but merely changes form.

Thus, arguing that the strategic invisibility of waste in the game mirrors a broader societal tendency, a concept that is central to both the game's mechanics and the scholarly analysis I have already mentioned. Societal efforts to manage and control waste, rendering it invisible through advanced disposal methods, are emblematic of a collective pursuit of order and purity. The game echoes this by leaving the consequences of waste management invisible, thereby using the Chthulucene aesthetics lens, leading the player's engagement to a reflection upon such strategies. In this way, the game becomes a virtual space where the waste management is a symbolic act – a reaffirmation of societal norms and values that strives to restore order through the strategic invisibility of waste. It is within this paradigm of out of sight, out of mind that the game cleverly weaves a narrative on the ecological impacts of such invisibility, prompting players to question the very systems in which they participate both virtually and in reality.

Extending this discussion, Liboiron offers a critical examination, arguing that the strategic invisibility of waste is further implicated in the operational logics, which suggests mimics of

33 Susan Sontag, *Regarding the Pain of Others* (Bungay: Penguin Books Limited, 2003).

34 Laura op de Beke, “Premediating Climate Change in Videogames: Repetition, Mastery, and Failure,” *Nordic Journal of Media Studies* 3, no. 1 (2021).

coloniality in contemporary waste management systems. These systems, often seen as hallmarks of civilized societies, stand in stark contrast to uncivilized practices that might adopt more holistic and integrative environmental management approaches.³⁵ It is possible to catch this contradiction in *Plasticity's* gameplay. The player's engagement with waste becomes a mirror of the colonial legacy – where the invisibility of waste is a preferred state, overshadowing practices that recognize waste as an intrinsic component of the ecological cycle.

With an ecocritical eye, the huge amount of waste depicted in the game environment denotes industrial production, pointing to the nature of the pollution. Nevertheless, by putting the pressure of eliminating the plastic waste from the land and water on the individuals, the game mechanics shift the blame for pollution onto consumers, thereby obfuscating the role of industrial production. This redirection of responsibility from the collective to the individual serves to mask the true scale and source of the problem. The game, perhaps inadvertently, becomes an allegory for the futility of consumer-centric waste management in the face of relentless industrial output. It calls attention to the need for a paradigm shift towards industrial accountability and degrowth.³⁶

The discourse on waste management is deeply intertwined with the Western portrayal of civilization. Within this scheme, the progression of a society's waste management methods serves as an indicator of its civilizational progress, rooted in a colonial mindset. The developmental trajectory from individual to societal attitudes

regarding waste reveals a pattern: as societies evolve towards what is often characterized by Eurocentric benchmarks as civilized, they show an increasing tendency to separate from and develop a distaste for waste. The symbolic aspects of this viewpoint have tangible effects on the design and execution of waste management systems. The prevalent models, with a focus on methods like curbside collection, industrial recycling, and the establishment of sanitary landfills, originated in the United States, particularly with the advent of the sanitary landfill in Fresno, California, in 1935. This orientation promotes a view that deems non-conforming waste management practices as inadequate or mismanaged.³⁷

This deficit-based outlook not only devalues traditional and subsistence practices but also enforces a hierarchical standard that favors certain waste management techniques over others. It often overlooks the ecological wisdom and sustainable practices inherent in Indigenous and non-Western societies. Such biases necessitate a reevaluation of the prevailing standards for waste management, to challenge the status quo to acknowledge and incorporate a broader spectrum of ecological knowledge and methodologies. This critical examination aligns with the influencing themes in *Plasticity*, which encourage questioning the unseen systems that contribute to environmental degradation and call for embracing a broader, more inclusive, and ecologically aware approach to managing waste.

Conclusion

In conclusion, this article aims to interrogate the obscured practices of waste management as depicted in the game *Plasticity*. Far from a mere exposé of waste visibility in digital narratives, the article critically examines how ecological engagement is governed and presented. By applying material ecocriticism theories and a close reading of gaming mechanics, I have

35 Liboiron, *Pollution Is Colonialism*, 75.

36 Degrowth is a political, economic, and social movement that advocates for the reduction of a nation's or a society's overall consumption and production. It challenges the traditional paradigm that economic growth is inherently good and questions the sustainability of a system that relies on continual expansion within a finite ecosystem.

37 Liboiron, *Pollution Is Colonialism*, 75.

subjected the concept of waste management to a thorough critique. This reasoning reveals the strategic invisibility at the heart of our waste disposal systems, a veneer that often masks the inadequacies of purportedly sustainable practices. Ultimately, this work challenges the reader to look beyond the superficial presentations of eco-friendly initiatives and consider the deeper systemic issues they may conceal.

Furthermore, in this study, I have explored the materiality of plastic and its intra-actions. This exploration has led to the identification of a new aesthetic form, referred to as Chthulucene aesthetics, a term borrowed from Donna Haraway's work, to indicate the necessary shift in aesthetics for the Anthropocene era. The game *Plasticity* serves as a case study to demonstrate the tangible influence of plastic on digital aesthetics. By discussing Haraway's concepts alongside Nicholas Mirzoeff's concept of countervisuality, the paper argues for the emergence of an aesthetic that is deeply rooted in the materiality of plastic. This materiality acts as a bridge between the virtual worlds of gaming and the physical reality, suggesting that plastic is not just a passive substance but an active agent in shaping our perception of aesthetics in the digital age.

The paper has achieved its aim of examining the dualistic presence of plastic in both tangible and digital domains, illuminating the complex interactions we have with this material. It has brought to light the nuanced interplay between what is seen and what is unseen, a dynamic characteristic of the Anthropocene era. By applying material ecocriticism and affect theory, this study offers new insights into how art can challenge and change our perceptions of sustainability. It encourages to reflect deeper on the often neglected aspects of our environment, pushing a societal re-evaluation of what ecological, sustainable, and environmental mean.

Moving forward, the discourse will delve deeper into the intentional visibility of waste, examining

it as an independent force through the perspective of various art forms. I will investigate how artistic expression can reveal and contest the societal norms and hidden processes that contribute to the marginalization of waste issues. The goal of this continued inquiry is to enlighten on the overlooked aspects of waste management in relation to waste and to promote a redefinition of what constitutes eco-friendly practices. By doing so, it aims to inspire actionable change and a more conscious approach to sustainable management practices.³⁸

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